

The Study on the Protection and Regeneration of Quadrangle Courtyards in Beijing Old City

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Abstract. Quadrangle courtyards are the basic architectural form of living in Beijing for generations. Quadrangle courtyards play an important role in the urban form and spatial organization of Beijing. At present, the protection of quadrangle courtyards faces many problems, such as complicated property rights, high population density, serious private construction and disorderly construction, and many interest demands. In recent decades, various models have been tried in the renovation and reconstruction of the old city led by the government, such as Juer Hutong, Yangmeizhuxiejie, Caochang Hutong. Through the analysis of cases, the countermeasures for the conservation of courtyards are studied.

Keywords: Beijing · Old City Regeneration · Quadrangle Courtyards · Historic Cultural Cities Conservation

1 Introduction

With the rapid development of Beijing's economy and large-scale urban development and construction, the "demolition and construction" approach to urban development has resulted in the "disappearance" of some hutongs and courtyards, affecting the traditional style and losing the vitality of the neighborhoods. The conservation and development of courtyards has become a major concern in the preservation of Beijing's historic and cultural cities [1]. Based on the various problems facing the conservation of courtyards, the Party Central Committee and the State Council have put forward new requirements for the conservation of the famous city, and have proposed countermeasures for the conservation of courtyards in the old city by examining the examples of renewal and renovation carried out in the old city in recent years.

2 The Main Problems of the Conservation of Courtyards

2.1 Complex Property Relations

Due to historical reasons, there are public, private, military, unit and religious properties in the housing ownership of the old city, and the amount of funds needed for property rights integration is huge.

2.2 Public Space Occupied

Firstly, private construction is serious. A large number of courtyards have become mixed "compound" due to historical reasons, and private construction is serious, the original regular courtyard, space layout, cultural atmosphere is gone, and a series of safety hazards. Second, bicycles, electric cars, electric tricycles, cars and other motorized and non-motorized vehicles occupy the hutong space.

2.3 Poor Building Quality

The building quality and living conditions need urgent improvement. The building quality of the current courtyard is generally poor and there are great safety hazards. However, the residents living in the "compound" are disadvantaged and have limited ability to solve their own housing problems, and there is a great demand to improve specific conditions.

2.4 Inadequate Laws and Regulations

The research and formulation of policies and regulations related to the protection of the old city are relatively lagging behind, and the construction standards of related buildings, traffic and municipalities are yet to be improved.

3 The Case Study of Courtyard Renewal

Since the 1980s, various types of conservation and renovation projects have been carried out in the old city, from "demolishing the old and building the new" to "microcirculation and progressive", reflecting the change in the understanding of the government, experts and society at all levels of the It also provides new inspiration for the subsequent conservation and renewal work.

3.1 The Ju'er Hutong Renovation Project

Since the late 1980s, Wu Liangyong academician design presided over the project, the innovative concept of "organic renewal" and "new courtyard" concept. The project demolished 1.255 hectares of land, a total of more than 20,000 square meters, with 13 new courtyard buildings. The transformation model created a new way of urban renewal in the center of Beijing at that time. After more than 30 years of use, the problems gradually revealed are: insufficient lighting, disturbance of privacy of residents; insufficient green space and public space; serious private construction; lack of parking facilities; commercial noise from the surrounding Nanluoguxiang seriously affects the life of residents, etc. [2].

3.2 The Yangmeizhu Xiejie Upgrade Project

In 2011, the Xicheng District Government commissioned a district-affiliated company to carry out a voluntary evacuation of Yangmeizhu Xiejie, preserving approximately one-third of the original residents [3]. Under the systematic planning, some of the vacated houses or courtyards have been implanted with community public service facilities, such as the "micro courtyard" and inner box courtyard at No. 8 Chaer Hutong, while others have been introduced with cultural connotations of cultural creativity and specialty businesses [4]. However, this model has caused many yards to voluntarily vacate a room or part of it is difficult to reuse, and the cost of care is high. Subsequently, in the White Pagoda Temple, Tianqiao North and other areas, the main way to encourage the whole courtyard retired, so as to facilitate the subsequent repair of the retired courtyard space to use.

3.3 The Caochang Hutong Improvement and Renovation Project

In 2014, the Dongcheng District Government officially launched the protection and repair work of Caochang Hutong, and in 2017 started the street improvement project. The street improvement work is to prohibit large demolition and construction, to protect the texture of the streets in the Caochang area, and to continue the traditional hutong style of building improvement. Through the demolition of private buildings in the streets and alleys, overhead lines have been put into the ground, rain and sewerage are separated, and many hutongs have single-side parking for motor vehicles, and through in-depth research and statistics on the real needs of residents, convenient services such as staple kitchens, vegetable stations and hairdressers have been added [5].

3.4 The Caixi Application-Based Rent Refund Project

This project is the first "application-based rent surrender and application-based improvement" project in Beijing. The project was launched in 2003 and stalled due to policy changes. In 2019, the Xicheng District Government adjusted the project to an application-based rent retirement project, which was implemented by the district-owned state-owned company. A total of 275 households were returned to the project, with a 38% return rate. The follow-up project not only opens up application-based improvements for eligible residents, but also continues to explore organic renewal models by creating talent apartments, introducing new businesses and other means.

3.5 The Imperial City-Jingshan Neighborhood Application-Based Rent Refund Update Vacating Project

The project was launched in March 2021. It is the first project with social capital to participate in application-based rent reversion in the core area's historic and cultural district. The project covers an area of about 74.5 hectares, with a construction area of about 520,000 square meters, involving 7,414 households. The main body of the project, Shoukai Group, has participated in the neighborhood renewal by means of self-financing, and the whole project is implemented in four phases, focusing on completing the public

facilities of the neighborhood, solving outstanding livelihood issues and realizing the revival of the old city. At present, Phase I and Phase II have been completed and 664 households have been vacated, with a ratio of 70.56%, including 89.98% of public housing.

4 The Study on Conservation Renewal Strategy

4.1 Focusing on Protection and Strengthen the Combination of Cultural Heritage

There are many cultural relics in the old city, and some of them are still inhabited by the people, so we should strengthen the work of relic retreat, carefully study the historical positioning and environmental characteristics of the relics, scientifically restore and protect them, and excavate the cultural connotation, so that the cultural relics can drive the cultural flavor of the hutongs where they are located, retain the "nostalgia" of old Beijing, and preserve the origin of the Beijing flavor. At the same time, the public should be mobilized to participate in the renewal and revitalization of the "hutongs and courtyards", so as to promote the cultural heritage and enhance the cultural vitality of the old city with the help of a wide range of social forces.

4.2 Focusing on the Combination of Protection and Upgrading of Infrastructure

Improve the level of infrastructure in the hutongs, the implementation of overhead lines into the ground project, the conditions of the hutongs to carry out rain and sewage diversion. In addition, the lack of parking facilities seriously plagues the cottage area. Under the premise of discouraging motor vehicle traffic in historical and cultural districts, the design of hutong parking is carried out, and parking spaces in hutongs are increased by using vacated spaces to build underground parking, or by transforming existing parking spaces into multi-storey mechanical parking. At the same time, encourage the parking resources of surrounding enterprises and institutions, schools and public offices to encourage them to open at the wrong time and provide residents with free parking spaces at night.

4.3 Focusing on the Combination of Conservation and Improving the Quality of Life of Residents

Relying on the responsible planners stationed in the neighborhood, we adhere to the problem-oriented approach, from the perspective of facilitating the life of residents, the overall design of the renovation and renewal, urban repair, and the gradual demolition of illegal structures, so that the "hutongs - courtyards" return to their original appearance. In the subsequent renovation, age-appropriate architectural design should be added for the elderly. Using the existing buildings and facilities vacated, we can make up for the shortcomings of the city, replenish small green areas, pocket parks and public service facilities, and improve the residents' sense of access, happiness and security.

4.4 Focusing on the Combination of Conservation and Cracking Institutional Mechanism Problems

The overall conservation of the old city is a very comprehensive work, involving a wide range of areas. The renewal projects currently carried out basically rely on the government through financial input or capital injection, by the streets, command or government background of state-owned companies or directly managed public housing management units, with public housing repair, municipal infrastructure improvement as a precursor plus project promotion, with high financial pressure. With the introduction of the new general plan and control plan, the whole society has reached the consensus of "no more demolition in the old city", it is suggested that the government can introduce laws and regulations to crack the institutional mechanism policy, and crack the problems in terms of financial guarantee, public housing transfer, land agreement transfer, municipal construction technology, operation, etc., so that the "hutongs - courtyards The "hutongs and courtyards" can be protected sustainably.

5 Conclusion

The special geographical location, the special humanistic atmosphere, the special historical background and cultural inheritance conditions have built the extremely rich historical and cultural connotation of hutongs and courtyards in Xicheng District. "Hutongs and courtyards are an important part of the historical and cultural preservation of the old city of Beijing, and they are the skeleton. To protect this golden card of history and culture, we need the joint efforts of the government, experts and the public, so that the city can keep its memory and the people can remember their nostalgia.

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